

AMENDMENTS TO THE CLAIMS:

Claims 1-36 (Cancelled)

37. (New) An incombustible withdrawing system for withdrawing an incombustible from a fluidized-bed furnace when a fluidized bed is formed therein by a fluidized medium, said withdrawing system comprising:

a mixture delivery path to deliver a mixture of the fluidized medium and the incombustible from a bottom of the fluidized-bed furnace;

a fluidized-bed separating chamber disposed downstream of said mixture delivery path to fluidize the mixture by a fluidizing gas, and to separate the mixture into a first separated mixture having a high concentration of the fluidized medium and a second separated mixture having a high concentration of the incombustible;

a conveyor in said mixture delivery path to deliver the mixture from the bottom of the fluidized-bed furnace to said fluidized-bed separating chamber;

a return passage to return the first separated mixture to the fluidized-bed furnace; and

an incombustible discharge passage to discharge the second separated mixture to an exterior of the fluidized-bed furnace.

38. (New) The incombustible withdrawing system according to claim 37, wherein said incombustible discharge passage is disposed downstream of said fluidized-bed separating chamber.

39. (New) The incombustible withdrawing system according to claim 38, wherein said incombustible discharge passage is to discharge the second separated mixture to an exterior of the fluidized-bed furnace by having the second separated mixture be delivered upwardly in said incombustible discharge passage and then discharged from said incombustible discharge passage, at a position higher than a surface of the fluidized bed when formed in the fluidized-bed furnace, to the exterior of the fluidized-bed furnace.

40. (New) The incombustible withdrawing system according to claim 39, wherein said incombustible discharge passage is to discharge the second separated mixture to the exterior of the fluidized-bed furnace by having the second separated mixture be delivered vertically upwardly in said incombustible discharge passage by a fluidized medium delivering device, and then discharged from said incombustible discharge passage, at the position higher than the surface of the fluidized bed when formed in the fluidized-bed furnace, to the exterior of the fluidized-bed furnace.

41. (New) The incombustible withdrawing system according to claim 39, wherein said incombustible discharge passage is to discharge the second separated mixture to the exterior of the fluidized-bed furnace by having the second separated mixture be delivered non-vertically upwardly in said incombustible discharge by a fluidized medium delivering device, and then discharged from said incombustible discharge passage, at the position higher than the surface of the fluidized bed when formed in the fluidized-bed furnace, to the exterior of the fluidized-bed furnace.

42. (New) The incombustible withdrawing system according to claim 39, further comprising:

a fluidized medium delivering device within said incombustible discharge passage, such that said incombustible discharge passage is to discharge the second separated mixture to the exterior of the fluidized-bed furnace by having the second separated mixture be delivered upwardly in said incombustible discharge by said fluidized medium delivering device, and then discharged from said incombustible discharge passage, at the position higher than the surface of the fluidized bed when formed in the fluidized-bed furnace, to the exterior of the fluidized-bed furnace.

43. (New) The incombustible withdrawing system according to claim 42, wherein said incombustible discharge passage is disposed such that a small clearance is provided between an inner surface of said incombustible discharge passage and said fluidized medium delivering device.

44. (New) The incombustible withdrawing system according to claim 43, wherein the small clearance is within a range of from about 5 mm to about 75 mm.
45. (New) The incombustible withdrawing system according to claim 42, further comprising:
a projection extending radially inwardly from an inner surface of said incombustible discharge passage.
46. (New) The incombustible withdrawing system according to claim 45, wherein a clearance between said projection and said fluidized medium delivering device is at least about 20 mm.
47. (New) The incombustible withdrawing system according to claim 42, wherein said fluidized medium delivering device comprises a screw conveyor having a screw vane, with a blocking member being on a rear face of said screw vane.
48. (New) The incombustible withdrawing system according to claim 47, wherein said blocking member comprises a continuous rear vane on the rear face of said screw vane.
49. (New) The incombustible withdrawing system according to claim 47, wherein said blocking member comprises ribs attached to the rear face of said screw vane.
50. (New) The incombustible withdrawing system according to claim 47, wherein said blocking member has an angle of $(90 - A + B)$ with respect to said screw vane, with A being an inclination angle of said screw conveyor, and B being an angle of repose of the mixture when conveyed by said screw conveyor.
51. (New) The incombustible withdrawing system according to claim 42, further comprising:

a blowing device for blowing a gas into a lower portion of said fluidized medium delivering device so as to increase pressure of a lower portion of said fluidized medium delivering device.

52. (New) The incombustible withdrawing system according to claim 37, wherein said fluidized-bed separating chamber comprises a passage portion connected to said incombustible discharge passage, with said passage portion having a cross-sectional area gradually increasing toward said incombustible discharge passage, and also having a bottom surface inclined downwardly to said incombustible discharge passage.

53. (New) The incombustible withdrawing system according to claim 37, wherein said return passage and said incombustible discharge passage are connected to said fluidized-bed separating chamber independently of each other, and said incombustible discharge passage is to discharge the second separated mixture to the exterior of the fluidized-bed furnace via an incombustible discharge port at a position higher than a surface of the fluidized bed when formed in the fluidized-bed furnace.

54. (New) A fluidized-bed furnace system comprising:
a fluidized-bed furnace to have a fluidized bed formed therein by a fluidized medium so as to combust, gasify, or pyrolyze material containing an incombustible; and
an incombustible withdrawing system including

(i) a mixture delivery path to deliver a mixture of the fluidized medium and the incombustible from a bottom of said fluidized-bed furnace,

(ii) a fluidized-bed separating chamber disposed downstream of said mixture delivery path to fluidize the mixture by a fluidizing gas, and to separate the mixture into a first separated mixture having a high concentration of the fluidized medium and a second separated mixture having a high concentration of the incombustible,

(iii) a conveyor in said mixture delivery path to deliver the mixture from the bottom of said fluidized-bed furnace to said fluidized-bed separating chamber,

(iv) a return passage to return the first separated mixture to said fluidized-bed furnace,
and

(v) an incombustible discharge passage to discharge the second separated mixture to
an exterior of said fluidized-bed furnace.

55. (New) The fluidized-bed furnace system according to claim 54, wherein
said incombustible discharge passage is disposed downstream of said fluidized-bed separating
chamber.

56. (New) The fluidized-bed furnace system according to claim 55, wherein
said incombustible discharge passage is to discharge the second separated mixture to an
exterior of said fluidized-bed furnace by having the second separated mixture be delivered upwardly
in said incombustible discharge passage and then discharged from said incombustible discharge
passage, at a position higher than a surface of the fluidized bed when formed in said fluidized-bed
furnace, to the exterior of said fluidized-bed furnace.

57. (New) The fluidized-bed furnace system according to claim 56, wherein
said incombustible discharge passage is to discharge the second separated mixture to the
exterior of said fluidized-bed furnace by having the second separated mixture be delivered vertically
upwardly in said incombustible discharge passage by a fluidized medium delivering device, and then
discharged from said incombustible discharge passage, at the position higher than the surface of the
fluidized bed when formed in said fluidized-bed furnace, to the exterior of said fluidized-bed furnace.

58. (New) The fluidized-bed furnace system according to claim 56, wherein
said incombustible discharge passage is to discharge the second separated mixture to the
exterior of said fluidized-bed furnace by having the second separated mixture be delivered non-
vertically upwardly in said incombustible discharge by a fluidized medium delivering device, and then
discharged from said incombustible discharge passage, at the position higher than the surface of said
fluidized bed when formed in said fluidized-bed furnace, to the exterior of the fluidized-bed furnace.

59. (New) The fluidized-bed furnace system according to claim 56, further comprising:
a fluidized medium delivering device within said incombustible discharge passage,
such that said incombustible discharge passage is to discharge the second separated mixture
to the exterior of said fluidized-bed furnace by having the second separated mixture be delivered
upwardly in said incombustible discharge by said fluidized medium delivering device, and then
discharged from said incombustible discharge passage, at the position higher than the surface of the
fluidized bed when formed in said fluidized-bed furnace, to the exterior of said fluidized-bed furnace.

60. (New) The fluidized-bed furnace system according to claim 59, wherein
said incombustible discharge passage is disposed such that a small clearance is provided
between an inner surface of said incombustible discharge passage and said fluidized medium
delivering device.

61. (New) The fluidized-bed furnace system according to claim 60, wherein
the small clearance is within a range of from about 5 mm to about 75 mm.

62. (New) The fluidized-bed furnace system according to claim 59, further comprising:
a projection extending radially inwardly from an inner surface of said incombustible discharge
passage.

63. (New) The fluidized-bed furnace system according to claim 62, wherein
a clearance between said projection and said fluidized medium delivering device is at least
about 20 mm.

64. (New) The fluidized-bed furnace system according to claim 59, wherein
said fluidized medium delivering device comprises a screw conveyor having a screw vane,
with a blocking member being on a rear face of said screw vane.

65. (New) The fluidized-bed furnace system according to claim 64, wherein said blocking member comprises a continuous rear vane on the rear face of said screw vane.
66. (New) The fluidized-bed furnace system according to claim 64, wherein said blocking member comprises ribs attached to the rear face of said screw vane.
67. (New) The fluidized-bed furnace system according to claim 64, wherein said blocking member has an angle of $(90 - A + B)$ with respect to said screw vane, with A being an inclination angle of said screw conveyor, and B being an angle of repose of the mixture when conveyed by said screw conveyor.
68. (New) The fluidized-bed furnace system according to claim 59, further comprising: a blowing device for blowing a gas into a lower portion of said fluidized medium delivering device so as to increase pressure of a lower portion of said fluidized medium delivering device.
69. (New) The fluidized-bed furnace system according to claim 54, wherein said fluidized-bed separating chamber comprises a passage portion connected to said incombustible discharge passage, with said passage portion having a cross-sectional area gradually increasing toward said incombustible discharge passage, and also having a bottom surface inclined downwardly to said incombustible discharge passage.
70. (New) The fluidized-bed furnace system according to claim 54, wherein said return passage and said incombustible discharge passage are connected to said fluidized-bed separating chamber independently of each other, and said incombustible discharge passage is to discharge the second separated mixture to the exterior of said fluidized-bed furnace via an incombustible discharge port at a position higher than a surface of said fluidized bed when formed in the fluidized-bed furnace.